

To Historical Analysis

An Elementary view for history students

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Abstract

The idea of avoiding mathematical theories and applications was one undoubtable reason that occasioned many student journey to arts courses and of course, this landed some in history or/and history and international studies department. The inconsistency conclusion of some, welcomed the spirit of 'scheming and cramming'. The boring nature of history formed discussion headlines among history students. The ado encountered in presenting historical records and data begs for unanswerable questions as some of them are used to analytical method, narrative method rhetorical method. etc. Hence, mathematical approach is inevitable at such pivot. However, the psychology danger of resolving the discrepancies between themselves and the love for mathematics impose logical challenges.

This lacuna tends to address these problems through a simple and of course, elementary mathematical approach with succulent historical examples. It should be called to the attention of the reader here that it does not required laborious ratiocination or herculean to grasp the scope of applying the earlier mentioned approach.

Key Words: Student, Arts Courses, Historical Records, Mathematical Approach

Introduction

No doubt that there have been countable occasions when history students have numerical information that need to be included in historical works and have avoided such due to the "tabula rasa" knowledge of such method, example of which include figures and other statistics from secondary or written sources (such as books, journals articles or newspaper reports); the results of excavations; or data that has been collected and analyzed as part of a project, dissertation or historical research. Such information can be used to illustrate an argument or convey complex or detailed information in a concise manner if well presented. It will be expedient to introduce three main methods of presenting such information: it can be incorporated into the main body of text; it can be presented separately as a table; and of course, it can be used to construct a graph or chart, the latter two can also be combine¹.

The embedded iters here offers therefore, practical advice on how to incorporate numerical information into essays, role of texts, tables, graphs and of course, charts as formats for presenting numerical data with its focus on crucial issues worthy of cognizance when presenting numerical historical facts for different intellectual audience. Its highlights ways that will possibly help to maximize the impact of such data and ensure that they are easy to etude and construe. Though the work is limited to table construction, histogram, bar chart, pie chart, line graph, and of course, scatter plot.

Determining which of these sub-mathematical analytical methods verbatim earlier is the most appropriate depends upon the amount of data you are dealing with and their complexity. The choice about whether to use text, tables or graphs requires careful consideration if you are to ensure that your reader or audience understands your argument and is not left gaga while interpreting data that are poorly presented or in an inappropriate format. It is crucial to remember that, when using a table or graph the associated text should describe what the data reveal about the topic; you should not need to describe the information again in words. This approach is useable in every history courses whether at the early or latter stage, ranging from 100

level to post graduate and at masters level and more suitable for courses like: Economic History, North and West Africa Civilization, Foreign Policy, etc.

“It must be noted that the close relationship between economic history and other social science courses as resulted in the acquisition of social science methodology for historical research, of course, particular importance are the mathematical or statistical technics”. S.O Ogunode

Data Analysis

Historical data are analyzed to discover patterns or relations that will be useful in projecting the future values of significant variables². It is credible in discovering patterns or relations that will be useful in projecting the future values of significant variables. Although data collection procedures are often very similar across diverse applications, the subsequent data analyses differ dramatically depending on whether the study is qualitative or quantitative. “Most news papers, television, news programmes and documentaries contain vast numbers of facts and figures concerning almost every aspect of life; including environment issues, the lengths of hospital waiting lists, crime statistics and economic performance indicators. Information such as this, which is gathered by carrying out surveys and doing research, is known as data”³.

Qualitative Analyses

It is a well-known fact that historians adopt a comparative method to compare and contrast two or more factors or events to tease out common components or attributes in historical analysis. However, historians began to realize that there are certain methodological pitfalls inherent to historical analyses.⁴ As a consequence, recent historian have attempted to devise more sophisticated methods to help ensure that these pitfalls can be successfully avoided, in this vein qualitative spirit of presentation will be given “way for help”.

Quantitative Analyses

It is beautiful to realize that historiometric studies have a special advantage over those doing qualitative studies: “The discipline has already accumulated a diverse and powerful repertoire of techniques”⁵. Obvious examples are the measurement methods found in historiometrics assessment. Although these analytical methods were designed for use with contemporary research participants, they often can be applied directly to historical data with minor or even minimal modifications.

Once historical data has been quantified in the form of concrete variables, those variables can be subjected to the same analytical tools seen in standard correlational studies. These tools include factor analysis, cluster analysis, multidimensional scaling, multiple regression, path analysis, structural equation models, and of course, mathematical models. This is however beyond the scope of this work.

Conversion of Raw Data

A data collected and before it is processed in any way, it is referred to as raw data.⁶ It is normally grouped into classes or category for easy assessment e.g. to check the Economic Growth in Ikafe land from 1800, 1801, 1802.....2000, will end up becoming uninteresting, instead, it can be grouped into four categories in 50 years, i.e. 1800-1850, 1851-1900, 1901-1950, and of course, 1951-2000.

Tables And Historical Numbering

Since numbering is disallowed in history unlike other disciplines, tables are then used to present numerical data in a wide variety of publications from essays, newspapers, journals and textbooks to the sides of grocery packets. They are the format in which most numerical data are initially stored and analyzed and are likely to be the means historians use to organize data collected during experiments, historical and dissertation research.⁷ However, when writing up your work as history student, you will have to make a decision about whether a table is the best way of presenting the data, or if it would be easier to understand if you were to use a graph or chart or preferably the two.

This section of this lacuna identifies therefore, the appropriate uses of tables, and discusses some design issues for constructing clear tables which are easily construed. The points covered in this item apply equally to primary data that you have collected yourself and those data that you have found in secondary sources and which you wish to include in your work. The latter may already be presented as a table in the original work but you do not have to reproduce it exactly. It may be that you only require an extract from the table to support your argument, or that the design of the table could be improved, or that you wish to merge information from two different publications. It is not tedious to do any of these as long as you ensure that you are committed to getting it done.

TABLE RELEVANCES

Tables, without mincing words, are effective ways of presenting data:

- When you wish to show how a single category of information varies when measured at different points (in time or space). For example, a table would be an appropriate way of showing how the category unemployment rate varies between different countries in Africa years past. (1990, 1991, 1992. Etc.).
- When the historical dataset contains relatively few numbers. This is because it is very hard for the reader to assimilate and interpret many numbers in a table. In particular, avoid the use of complex tables in talks and presentations when the audience will have a relatively short time to take in the information and little or no opportunity to review it at a later stage.
- When the precise value is crucial to your argument and a graph would not convey the same level of precision. For example, when it is important that the reader knows that the result was 2.48 and not 2.45.
- When you don't wish the presence of one or two very high or low numbers to detract from the message contained in the rest of the historical dataset. For example if you are presenting information about the annual profits of an organisation and don't want the underlying variability from one year to the next to be swamped by a large loss in a particular year.⁸

TABLE DESIGN “A PRATICAL STEPS”.

In effort to ensuring that your table is clear and easy to interpret there are a number of design issues that need to be considered. These are verbatim as follows:

- Since tables consist of rows and columns of information, it is important to consider how the data are arranged between the two.
- If there are several columns or categories of information a table can appear complex and become hard to read. It also becomes more difficult to list the data by magnitude since the order that applies to one column may not be the same for others. In such cases you need to decide which column contains the most important trend and this should be used to structure the table. If the columns are equally important it is often better to include two or more simple tables rather than using a single more complex one.
- Numbers in tables should be presented in their most simple format. This may mean rounding up values to avoid the use of decimal places, this is refer to in mathematics as “Approximation” stating the units (e.g. £4.6 million rather than £4,600,000) or using scientific notation (e.g. 6.315×10^{-2} rather than 0.06315).
- All tables should be presented with a title that contains enough detail that a reader can understand the content without needing to consult the accompanying text. There should also be information about the source of the data being used; this may be a reference to a book or journal, or could indicate that the data are results from an experiment carried out by the student on a particular date.
- Where more than one table is being presented it is standard practice to give each one a unique reference number, and in larger pieces of work, such as dissertations or historical records, a list of tables with their page number is usually provided in addition to the contents page.
- The formatting of the table should not resemble a spreadsheet where each entry is bounded by a box since this makes it difficult to read across rows or down columns. However, the design of the table should help the reader interpret the data and so the use of lines and/or bold text to separate headings from the body of data, or highlighting/shading specific rows or may be effective, shading and colouring will still be discourse in this paper. Avoid large gaps between columns since this also makes it difficult to read along a row.⁹

Practical Example: It can be presented in this format:

The table below shows the percentage of National Interest pursued by each regime in Nigeria Foreign Relation since 1960-1999.

Table One:

Regimes	Percentage
Tafawa Balewa	58
Gen. Aguyi Ironsi	02
Lt. col. Yakubu Gowon	61
Muritala Obasanjo	70
Alhaji Shehu Shagari	44
Gen. Amuldu Buhari	38
Gen. Ibrahim babangida	50
Cheif Ernest Shonekan	01
Gen. Sani Abacha	11
Gen. Ablusalam Abubakar	50

Source: *Author's Idea***Raw Data Source¹⁰****Observations**

- The table has title and the source of the information is provided.
- Row titles straddle two lines.
- Each cell is bounded as if in a spreadsheet.
- The alphabetical listing of national interest in non-numerical ordering of data down the columns

Using Graphs to present Historical Data.

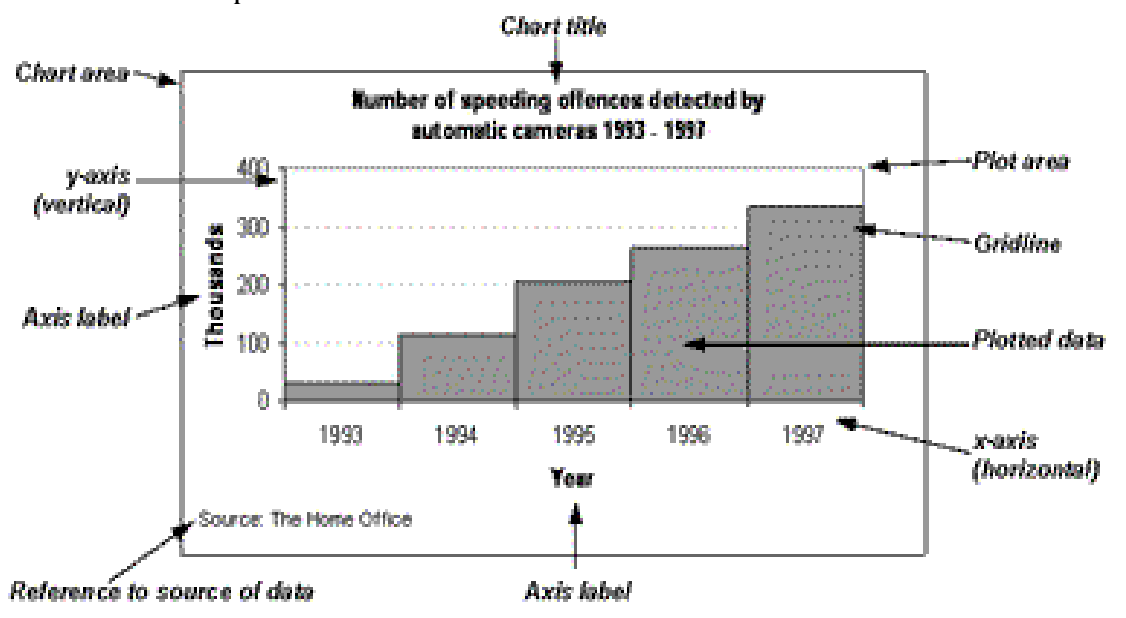
Graphs are meliorated means of describing, exploring and of course, summarising numerical data because the use of a visual image can simplify complex information and help to highlight patterns and trends in the data. Effectively, they are ways of presenting a large amount of data but can also be used instead of a table to present smaller historical datasets. There are typologies of graphs to choose from with critical consideration to ensure that the graph type selected is the most appropriate for the data. Having done this, it is then essential to ensure that the design and presentation of the graph help the reader or audience to construe the data.

“Graph theory, a branch of discrete mathematics, provides us with a rich and comprehensive set of vocabulary and tools we can use to talk and think about graphs”.¹¹

It is requisite to discuss some general guidelines for designing readily understandable graphs. This will answer the question of what is obtainable in a good graph design. Doubtlessly, there are enormous different types of graph; there are a number of elements that are common to the majority of them such as axes. This section of this lacuna provides some general guidelines to help you design your graph and ensure that you apply these elements in a way that will help the reader or audience to construe the data you are presenting.

COMPONENTS OF A GRAPH, “A Check of the Goodability of a Graph”

The different components of a graph are identified in the diagram below and this is followed by a description that highlights some of the specific design and presentation issues related to each component.



Source: www.le.ac.uk/studentdevelopment

Chart Title

It is sagacaite to understand that all graphs should include a title that summarises what the graph shows. The title should identify what is being described (e.g. Historical Survey Of Socio Economy Growth In Akungba, 1999-2013) and the units of measurements (e.g. percentages, total number, frequency). The title may be placed within the chart area, as in the example shown above, it can also be place above or below the chart.

Chart Area

The chart area did not leave it undefined, the boundary of all the elements related to the graph including the plot itself and any headings and explanatory text. It emphasizes that these elements need to be considered together and that they are separate from the surrounding text. The boundary of the chart area can be imaginary rather than defined by a frame.

Plot Area

The plot area is that region containing the data. It is of course bounded by the x- and y-axes to the bottom and left side. Looking at it, the frame can be completed by drawing around the top and right sides too, but this is not essential.

The X-Axis And The Y-Axis

The x-axis on one hand is the horizontal line that defines the base of the plot area. Depending upon which type of graph is being considered different locations on the x -axis represent either different categories (such as years) or different positions along a numerical scale (such as temperature or income). Details are placed just below the x-axis and an axis label is usually provided to clarify the units of measurement. However, if the category details are mentioned somewhere else such as in the title of the graph, or are very obvious (such as years) then it is not necessary to include an axis label, this is crucial in the course of presenting historical records.

The y-axis on the other hand, is the vertical line that usually defines the left side of the plot area, but if more than one variable is being plotted on the graph, then the vertical lines on both the left and right sides of the plot area may be used as y-axes. The y-axis always has a numerical scale and is used to show values such as counts, frequencies or percentages. Intervals on the scale are marked by numbers and tick marks, indicating the major divisions, to the left of the y-axis. Like the x-axis, the y-axis usually has a label that provides details of the units of measurement. The label is often written vertically to follow the line of the y-axis but can instead be placed just above the top of the y-axis. In order to best highlight a trend in the data, it may be necessary to start the y- axis scale at a point other than zero. In such cases the starting value on the y-axis should be clearly labeled and the readers' attention drawn to the non-zero start by breaking the y- axis just below the first value.

GRIDLINES

Gridlines as another component are the vertical and horizontal lines placed within the plot area to help the audience to peruse the values from the graph. The gridlines should be subtle and not detract from the data. In the case of simple graphs it is not always necessary to include them. Gridlines are usually drawn at regular intervals based on the major divisions of the y-axis scale.

REFERENCING THE SOURCE

If the graph you are presenting is based on data from another publication then it is more than requisite that you acknowledge the source of the original data somewhere within the chart area or title. If however, the graph is based on data that you have collected yourself or personal discovery then there is usually no need to provide details of the information source since this is usually clear from the accompanying text.¹²

EXPLAINING YOUR GRAPH

Haven given the reference of your work, you are expected to give a clearer and understandable explanation of your graph if there be any need. It is expedient to give such explanation when dealing with questions that compares numbers of year, an increase or decrease of a factor or changes in factor, the growth of an economic in series of years, the workability of an invested object in consecutive years.etc. This is to ensure that the reader is not lost in oblivion during the perusal and while trying to etude the presented graph.

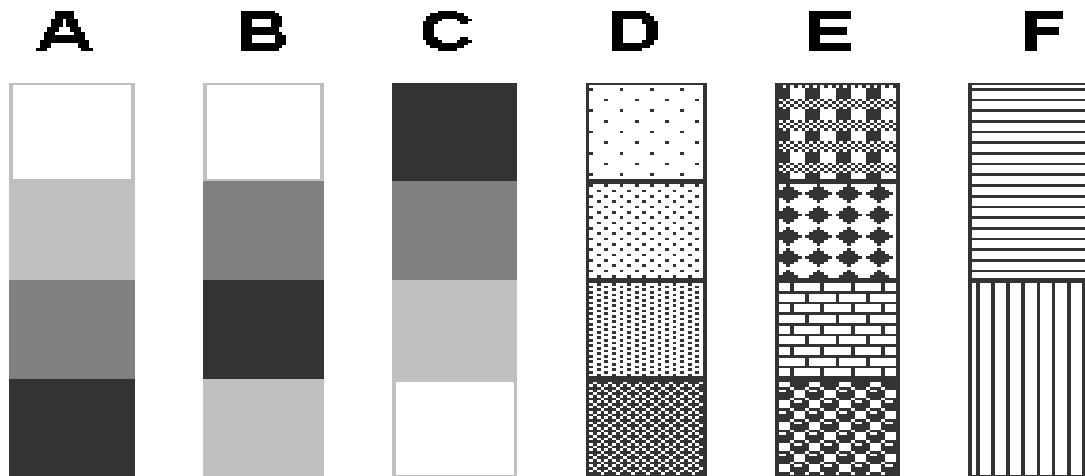
USE OF COLOUR AND SHADING FOR PROPER GRAPH

Demarcation And Presentation

It is instructible to know that, in bar charts, histograms, and pie charts, shading and colour are often used to distinguish the areas representing different categories. The choice of which colour combinations and shading patterns to use is ultimately an intrapersonal matter but there are some general points that will help to ensure that your chart is cinch to construe.

If there is a natural order or sequence to the data you are plotting then the colours or shading patterns used to represent the categories that should reflect this so that the colours of adjacent areas grade from dark tones to light tones or vice versa. Examples are shown below:

Examples of different shading effects in histogram bars



Source: www.le.ac.uk/studentdevelopment

From the above example, it is obvious that A and D show a better use of shading than B. The darkest colours should also be placed at the bottom of the column otherwise they dominate the bar and can give the impression that it is taxonomically heavy. For a perpetual clearer picture of this, compare A and C which show the same colour sequence but in reverse order. In the same manner, similar optical effects can occur with the use of some shading patterns. For example the patterns used in E are too busy and make distinguishing the different areas of the bar difficult. In accessing F, the use of vertical lines results in the apparent lengthening of the bottom area of the bar whilst the horizontal lines have the effect of shortening the upper area of the bar when in fact the two areas are equal in size.

Types of Graph

A summary with practical example of the types of data that can be presented in the most common types of graphs useable in History is provided below

- **The Use of Bar charts in presenting historical data**

Interestingly, Bar charts are one of the most commonly used types of graph and are used to display and compare the number, frequency or other measure (e.g. mean) for different discrete categories or groups. The graph is constructed such that the heights or lengths of the different bars are proportional to the size of the category they represent. Since the x-axis (the horizontal axis) represents the different categories it has no scale. The y-axis (the vertical axis) does have a scale and this indicates the units of measurement. The bars can be drawn either vertically or horizontally depending upon the number of categories and length or complexity of the category labels. There are various ways in which bar charts can be constructed and this makes them a very flexible chart type. For example, if there is more than one set of values for each category then grouped or component bar charts can be used to display the data. Consequently, Multiple Bar Charts are used to present an historical information that has more than one part, and of course, Component Bar charts are bars used to represent a group of value into different categories.

- **Types of data displayable on a bar chart?**

Bar charts are inevitably useful for displaying data that are classified into nominal or ordinal categories. Nominal data are categorised according to descriptive or qualitative information such as: county of birth, or subject studied at university. Ordinal data are similar but the different categories can also be ranked, for example in a survey people may be asked to say whether they thought something was very poor, poor, fair, good or very good. It is salient to note that with nominal data, taxonomical arrangement in categories so that the bars will be grade sequentially from the largest category to the smallest category will help the reader to interpret the data. However, this is not appropriate for ordinal data because the categories already have an obvious sequence. Bar charts are also useful for displaying data that include categories with negative values, because it is possible to position the bars below and above the x-axis.

In analysing historical data therefore, it can be used to describe difference epoch changes in historical facts. Example is a comparison of economy growth in a community through same or different factors in years past.

- **Horizontal and Vertical Bar Charts**

It is pertinent to the aforementioned above to note that Bar charts are normally drawn so that the bars are vertical which means that the taller the bar, the larger the category. However, it is also possible to draw bar charts so that the bars are horizontal which means that the longer the bar, the larger the category. This is a particularly effective way of presenting data when the different categories have long titles that would be difficult to include below a vertical bar, or when there are a large number of different categories and there is insufficient space to fit all the columns required for a vertical bar chart across the page.¹³

Practical Example of the use of Bar Chart for Historical Data
Example....in this format

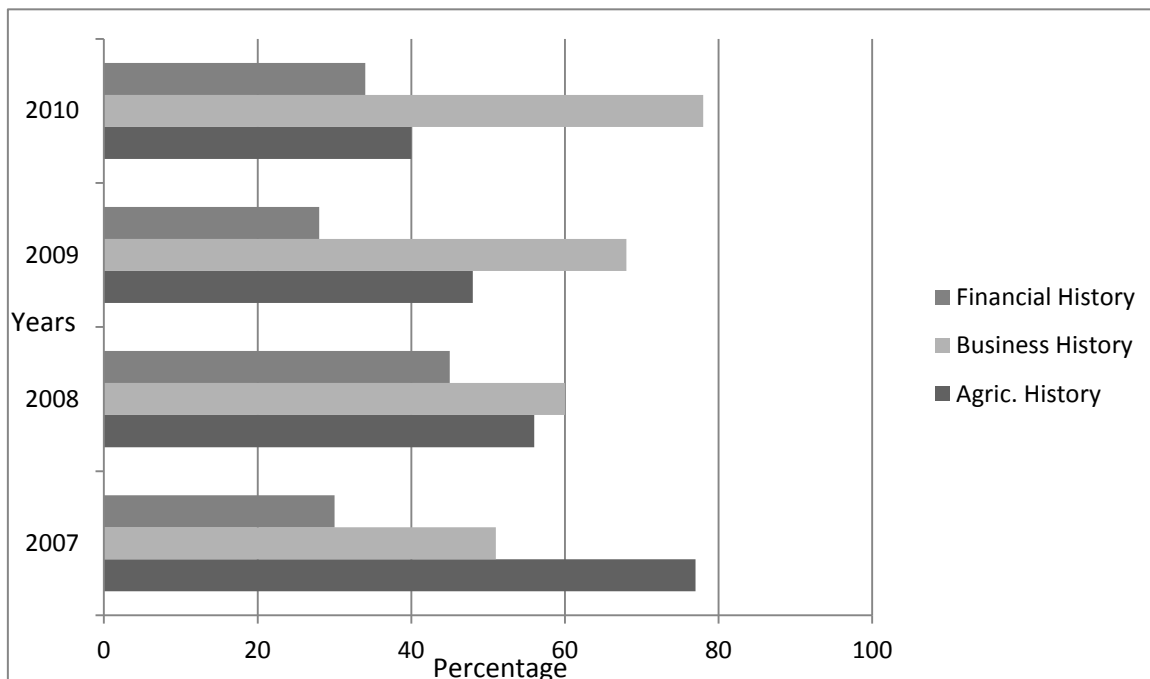
.....at this pivot, it will not be a verbose to compare the population of students of History and International Studies Department in Adekunle Ajasin University that pursued their masters degree program in the field of Agricultural history, Business history and Financial history between 2007-2010 with the aid of a bar chart.

The table below shows the population of Students of History and International Studies Department of Adekunle Ajasin University in percentage, that pursued their masters' degree program in the field of Agricultural history, Business history and Financial history between 2007-2010.

Table Two:

Years	Agric. History	Business History	Financial History
2007	77	51	30
2008	56	60	45
2009	48	68	28
2010	40	78	34

A Bar Chart Showing the population of Students of History and International Studies Department in Adekunle Ajasin University that pursued their masters' degree program in the field of Agricultural history, Business history and Financial history between 2007-2010



Source: Author's Idea

Raw Data Source¹⁴

With the example above, you should be able to formulate and construct your own Bar chart using historical data.

The Use of Histograms in Presenting Historical Data.

Histograms are a special form of bar chart where the data represent continuous rather than discrete categories. For example a histogram could be used to present details of the average number of hours exercise carried out by people of different ages because age is a continuous rather than a discrete category. However, because a continuous category may have a large number of possible values the data are often grouped to reduce the number of data points. For example, instead of drawing a bar for each individual age between 0 and 65, the data could be grouped into a series of continuous age ranges such as 16-24, 25-34, 35-44 etc. Unlike a bar chart, in a histogram both the x- and y-axes have a scale. This means that it is the area of the bar that is proportional to the size of the category represented and not just its height.¹⁵

Practical Example, in this format:

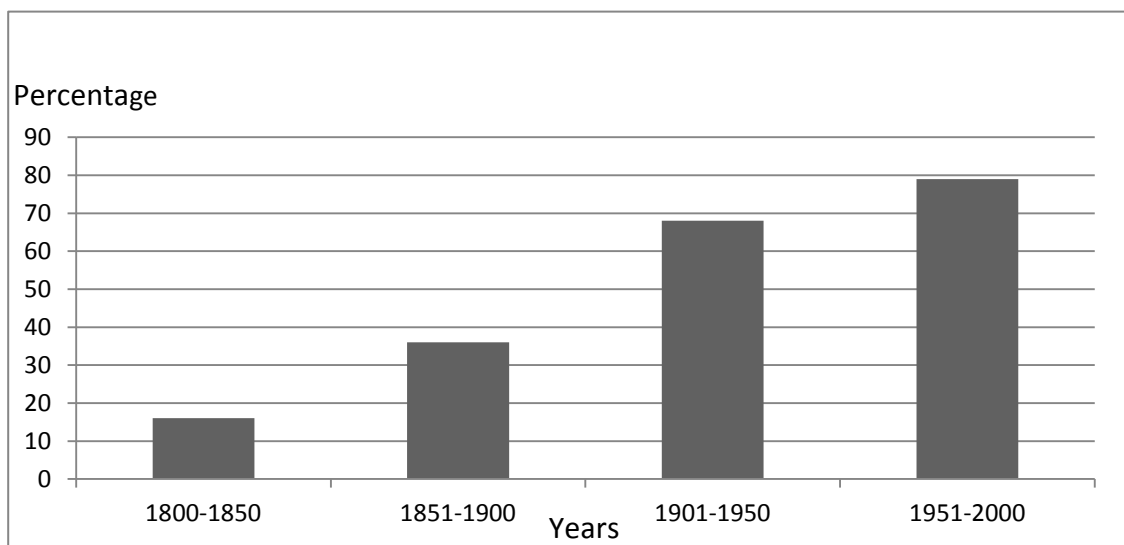
.....*The Economic growth in Ikale land is unarguable credited to the migration of the Ihobo Migrant, British intervention and of course, Government involvement in the exploitation of Palm Oil produce, but it will be important to check each contribution using our period of study.*

The table below show the economy growth in Ikale land in Ondo State between 1800-2000 to check the contribution of the Ihobo migrant, British intervention and of course, Government involvement in the exploration of oil palm.

Table Three:

Years	Contribution
1800 – 1850	16
1851 – 1900	36
1901 – 1950	68
1951 – 2000	79

A Histogram showing the economy growth in Ikale land in Ondo State between 1800-2000 to check the contribution of the Ihobo migrant, British intervention and Government involvement in the exploration of oil palm.



Source: Author's Idea**Raw Data Source¹⁶**

Unquestionably, this example is elucidating enough to make the opaque of this method easy-to-understand.

The Use of Pie Charts in Presenting Historical Data.

Like every other Chart that as being the bone of contention in this lacuna, a pie chart is a circular graph that shows the relative contribution that different categories contribute to an overall total. A wedge of the circle represents each category's contribution, such that the graph resembles a pie that has been cut into different sized slice. Worthy of Addition is the fact that Pie charts are a visual way of displaying how the total data are distributed between different categories. It, with a clearer picture, shows the proportional distribution of datasets between different types of populations. Consequently, a pie chart could be use to show the percentage of the total votes received by each party in an election while reviewing election historical results. Pie charts should only be used for displaying nominal data (i.e. data that are classed into different categories). They are generally best for showing information grouped into a small number of categories and are a graphical way of displaying data that might otherwise be presented as a simple table.

There are certain historical data that are Pie Chart-Presentable; these data are majorly feasible especially when studying courses like Economic History, Political History, Medical History, International History. etc. where quantitative historical data are use to judge the present object in question.

However, Pie charts are:

- Visual way of displaying data that might otherwise be given in a small table.
- Useful for displaying data that are classified into nominal or ordinal categories.
- Generally used to show percentage or proportional data and usually the percentage represented by each category is provided next to the corresponding slice of pie.
- Pie charts are good for displaying data of around 6 categories or fewer. However, when there are more categories it is difficult for the eye to distinguish between the relative sizes of the different sectors and so the chart becomes difficult to construe, therefore throw your audience or reader into total discombobulation.

History students find it uneasy to construct a pie chart to represent their data. Here is a guide. Note however that regardless of the figure given or obtain in the course of your research, it must be converted to 360° which is the final result to use in constructing your pie chart.¹⁷

THE PIE CHART TABLE

This is the table that will present the information which you will use to construct your pie chart. It usually has four or five column. The first column is the category column. Example is a sector in the example below. The second column will have in bank the figures in percentage that is allotted to each category or sector and all the figure are then summed up to get the total as shown in the example below. The third column is the calculation column it is normally a large column,

hence, called ‘reference of frequency’ and of course the fourth column is use to record the result of the calculation from each category. This is then summed up to check it exactness which must be 360° in totality.

Instructions

- Sum up the figures in column two. i.e. frequency column.
- Divide each frequency by the sum gotten in column two and multiple by 360° . Note: 360° is constant. This will give you the contribution of each category in degrees.
- Add all the answer gotten in degrees to confirm it correctness. Note: the total sum must equal to 360° .
- Get your divider, compass with pencil and of course, ruler ready for usability.
- Use your compass to draw a circle of any size by holding it on your paper and turn, but make sure it is clear for assessment.
- Locate the centre and draw a line, from the line measure the first category and cross it down to the centre. Continue until the last portion is measured for confirmation.
- Label it with each degree and category’s name respectively. In case the fifth column is use, the first one will contain an alphabetical order of the category. The alphabet can be use to represent each category when chart is completed instead of writing the categories name, especially when the names are long.
- Give a title to your pie chart and of course, the source.

Practical Example. *In this Format,*

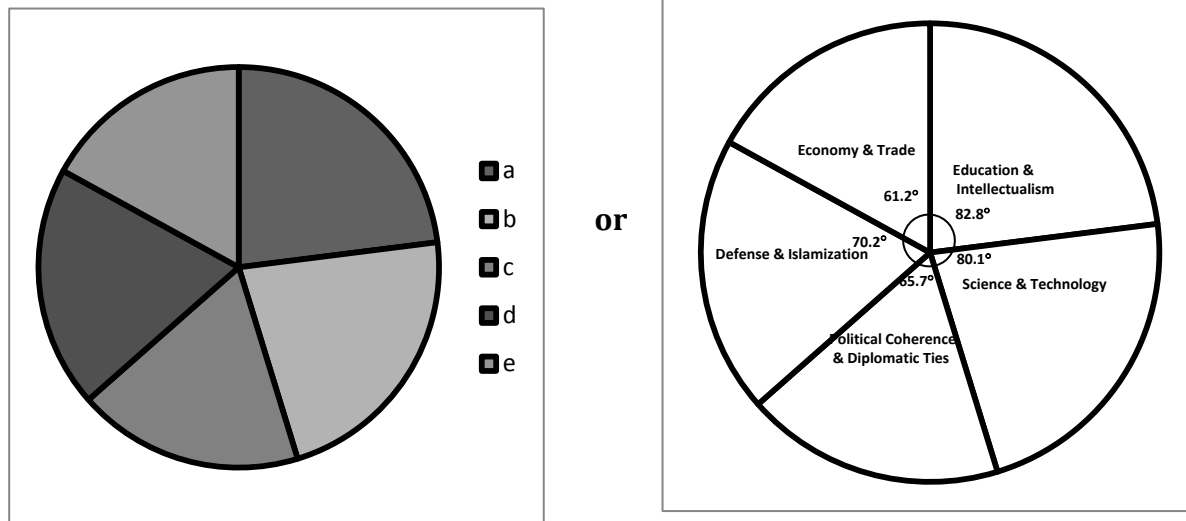
.....*The contributions of Fatimid to the growth of North Africa by 1750 will be accessed from five major sector of their Economy which are: Education and Intellectualism; Science and Technology; Political Coherence and Diplomatic Ties; Defense and Islamization and Economy and Trade, with the aid of a Pie Chart for clearer understanding of this discourse.*

The table below shows the contributions of Fatimid to the growth of North Africa by 1750 from five major sector of their Economy.

Table Four:

	Sectors	Frequency %	Ref of Frequency	Ref
A	Education & Intellectualism	92	$92/400 \times 360^\circ$	82.8°
B	Science & Technology	89	$89/400 \times 360^\circ$	80.1°
C	Political Coherence & Diplomatic Ties	73	$73/400 \times 360^\circ$	65.7°
D	Defense & Islamization	78	$78/400 \times 360^\circ$	70.2°
E	Economy & Trade	68	$68/400 \times 360^\circ$	61.2°
Total		400		360°

A Pie Chart showing the contributions of Fatimid to the growth of North Africa by 1750 from five major sector of their Economy.



Source: Author's Idea

Raw Data Source¹⁸

This example, without any fumiferous of confusion, as succeeded in leaving the reader blissful and fuel your eagerness to practice your own example.

Line graphs

Line graphs are usually used to show time series data – that is how one or more variables vary over a continuous period of time. Typical examples of the types of data that can be presented using line graphs are monthly rainfall and annual unemployment rates. Line graphs are particularly useful for identifying patterns and trends in the data such as seasonal effects, large changes and turning points. As well as time series data, line graphs can also be appropriate for displaying data that are measured over other continuous variables such as distance. For example, a line graph could be used to show how pollution levels vary with increasing distance from a source, or how the level of a chemical varies with depth of soil. However, it is important to consider whether the data have been collected at sufficiently regular intervals so that estimates made for a point lying half-way along the line between two successive measurements would be reasonable. In a line graph the x-axis represents the continuous variable (for example year or distance from the initial measurement) whilst the y-axis has a scale and indicates the measurement. Several data series can be plotted on the same line chart and this is particularly useful for analysing and comparing the trends in different datasets.

Practical Example of A Line Graph. In this format:

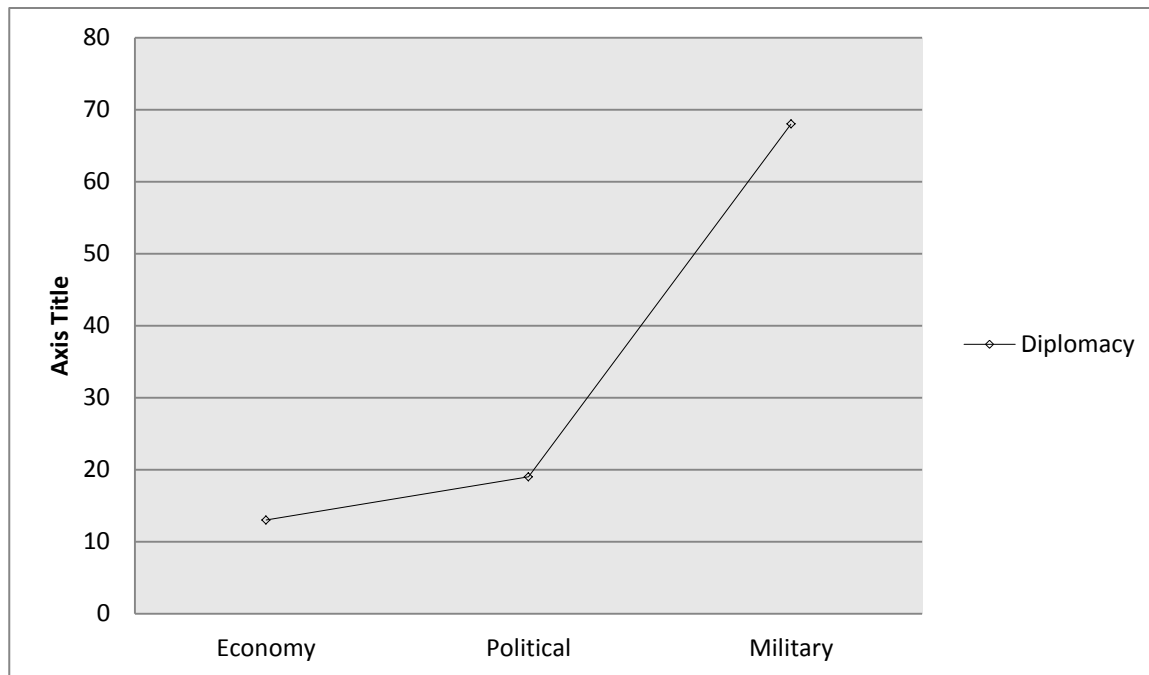
.....It is succulent to pictured the percentage of different types of Diplomacy pursued by The Abacha regime of 1993-1998 for a proper sagacity of the reader in this work, this will be limited to Economy Diplomacy, Political Diplomacy and of course, Military Diplomacy using the aid of a Line Graph.

The table below shows the percentage of different types of Diplomacy pursued by The Abacha regime of 1993-1998.

Table Five:

Diplomacy	Percentage
Economy	13
Political	19
Military	16

A Line Graph showing the percentage of different types of Diplomacy pursued by The Abacha regime of 1993-1998.



Source: Author's Idea

Raw Data Source²⁰

The practical example given above on Line Graph is explanatory enough to give the desire understanding to the student.

Scatter Plots

Scatter plots which is the last sub-mathematical approach in this lacuna are used to show the relationship between pairs of quantitative measurements made for the same object or individual. For instance, a scatter plot could be used to present information about the examination and coursework marks for each of the students in a class. In the example here, the paired measurements are the age and height of children in 1837. In a scatter plot a dot represents each individual or object (child in this case) and is located with reference to the x-axis and y-axis, each of which represent one of the two measurements. By analysing the pattern of dots that make up a scatter plot it is possible to identify whether there is any systematic or causal relationship between the two measurements. For example, in this case it is clear from the upward trending pattern of dots that children's height increases with age. Regression lines can also be added to the graph and used to decide whether the relationship between the two sets of measurements can be explained or if it is due to chance.²¹

Practical Example: in this format.....

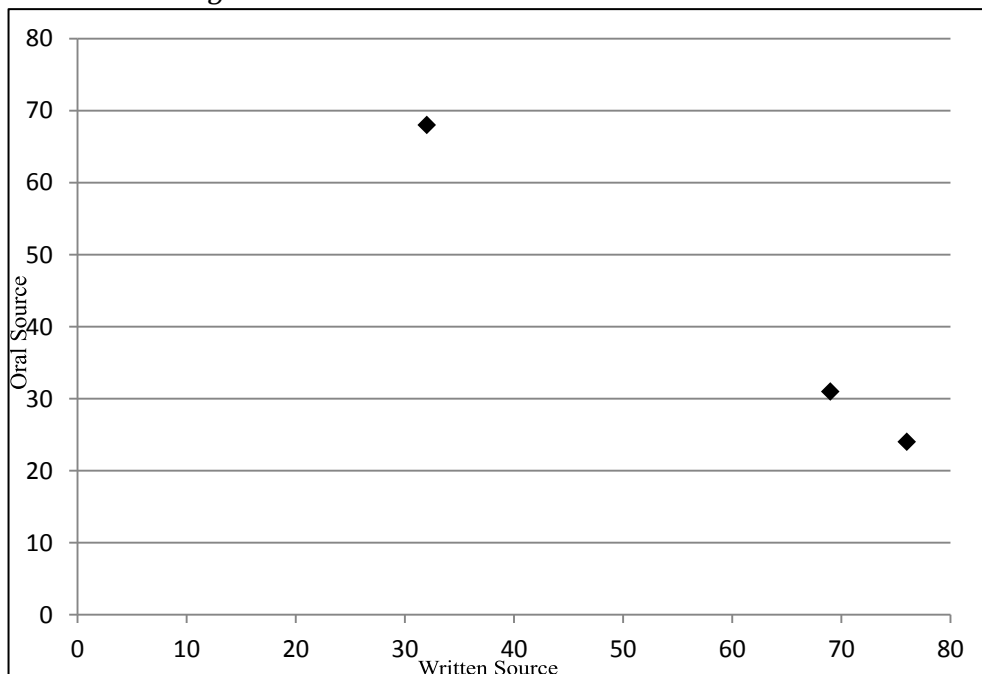
..... in comparing the efficacy of the written source and Oral source of history from the Dark Age to the middle age therefore, Scatter plot will be the best to present their vis-à-vis relation.

The table below shows the relationship between Written and Oral source of history from the Dark Age to the middle age.

Table Six:

Epoch	Analytical Approach	Other Approaches
Pre-History	76	24
History	69	31
Modern History	32	68

A Scatter Plot Showing the relationship between Written and Oral source of history from the Dark Age to the middle age



Source: Author's Idea

The example offered above clearly state the relationship between the Written Approach and other Approaches in the period of study.

Conclusion

So far, this lacuna, as elementary as it handles this discourse, as successfully elucidate at least, all the opaque in the said approach which as perpetually impose inferiority historical study and thinking to history students. It has undisputedly disproved the position of boring history nature and an isolated essay (analytical) historical study which of course is limited to mere understanding. It has built a friendly self teaching style for the reader to imbibe the culture of self learning. The reader, at this junction, must have satisfied their desire to fill the place of “tabula rasa” known-how of mathematical approach to historical analysis with the embedded rugged-dogged acquired sagacity while etuding this approach. In serpiginous, the paper as given common historical examples that is around the student courses of studies especially those that are considered suitable for the approach, which of course as rendered indivisible help even to a dunce and lethargic readers in assimilating the facts and files. The students are expected to therefore enamored themselves with the approach to cause a vicissitude in historical world and to become a better historians by updating to the new trend of presenting a professional historical data.

References and Notes

1. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
2. Dean Keith Simonton, “Qualitative and Qualitative Analysis of Historical Data” Department of Psychology, University of Carnifonia. August 2002. p. 626
3. A. Michael Berman, “Data Structures VIA C++:Objects by Evolution” New York: Oxford University Press. Inc. p. 363.
4. Dean Keith Simonton, “Qualitative and Qualitative Analysis of Historical Data” Department of Psychology, University of Carnifonia. August 2002. p. 626
5. Ibid, p. 627
6. Anthony Croft and Robert Davison, “ Foundation Maths Forth Edition” Pearson Education Limited 2005. pp. 382-389
7. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
8. Ibid.
9. Ibid.
10. S.T Okajare, “A history of Nigerian Foreign Relations 1960-2000” in S.O Arifalo and Gboyega Ajayi (eds.) (2003) Essay in contemporary Nigerian History. Lagos: First Academic Publishers. pp. 166-193
11. A. Michael Berman, “Data Structures VIA C++:Objects by Evolution” New York: Oxford University Press. Inc. p. 363.
12. A series produced by Student Development at the University of Leicester

- | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
13. Ibid.
 14. Ogunode Sunday, HIS 209: “Introduction to Economic History”, Undergraduate Lecture Note 13/05/2014, Department of History and International Studies, Adekunle Ajasin University, Akungba Akoko, Ondo State. (Unpublished)
 15. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
 16. Olusanya Faboyede. Ph.d, HIS 106: “History of the People of Ondo state 1800 till present”, Undergraduate Lecture Note 27/02/2014, Department of History and International Studies, Adekunle Ajasin University, Akungba Akoko, Ondo State. (Unpublished)
 17. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
 18. Pual A. Ph.d, HIS 108: “History of North and West Africa 1500 till 1800”, Undergraduate Lecture Note 12/3/2014, Department of History and International Studies, Adekunle Ajasin University, Akungba Akoko, Ondo State. (Unpublished) See Also: Bernard Lewis, An Interpretation of Fatimid History. Unprinted Article. (www.ismaili.net/source/1359b.html) 17/3/2014. 5:00pm
 19. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014
 20. S.T Okajare, “A history of Nigerian Foreign Relations 1960-2000” in S.O Arifalo and Gboyega Ajayi (eds.) (2003) Essay in contemporary Nigerian History. Lagos: First Academic Publishers. pp. 184-186. See also: Ebenezer Babatope, (2000) “The Abacha Years what went wrong” Lagos: Ebino Topsy Publishers. pp. 1-88
 21. A series produced by Student Development at the University of Leicester | studentdev@le.ac.uk | www.le.ac.uk/studentdevelopment. 9/4/2014